CLAIMS

What is claimed is:

1. A crosslinkable thermal interface material comprising at least one rubber compound, at least one amine resin and at least one thermally conductive filler.

2. The thermal interface material of claim 1, further comprising at least one phase change material.

3. The thermal interface material of claim 1, wherein the at least one rubber compound comprises at least one terminal hydroxy group.

4. The thermal interface material of claim 3, wherein the at least one rubber compound comprises at least one saturated compound.

5. The thermal interface material of claim 4, wherein the at least one rubber compound comprises hydrogenated polyalkyldiene mono-ol, hydrogenated polyalkyldiene diol, or a combination or mixture thereof.

6. The thermal interface material of claim 5, wherein the hydrogenated polyalkyldiene mono-ol comprises hydrogenated polybutadiene mono-ol.

7. The thermal interface material of claim 5, wherein the hydrogenated polyalkyldiene diol comprises hydrogenated polybutadiene diol.

8. The thermal interface material of claim 1, wherein the at least one amine resin comprises a melamine resin.

9. The thermal interface material of claim 8, wherein the melamine resin comprises an alkylated melamine resin.

10. The thermal interface material of claim 9, wherein the alkylated melamine resin comprises butylated melamine resin.

11. The thermal interface material of claim 1, wherein the at least one thermally conductive filler comprises a metal powder, a boron nitride compound or a combination or mixture thereof.

12. The thermal interface material of claim 11, wherein the metal powder comprises aluminum powder, silver powder, copper powder or a combination or mixture thereof.

13. The thermal interface material of claim 2, wherein the at least one phase change material comprises a wax.

14. The thermal interface material of claim 13, wherein the wax comprises a paraffin wax.

15. The thermal interface material of claim 1, further comprising at least one catalytic material.

16. The thermal interface material of claim 2, further comprising at least one catalytic material.

17. The thermal interface material of one of claim 15 or 16, wherein the at least one catalytic material comprise sulfonic acid catalyst.

18. The thermal interface material of one of claims 1 or 2, further comprising at least one wetting agent.

19. The thermal interface material of claim 18, wherein the wetting agent comprises organotitanate.

20. A layered component comprising the thermal interface material of claim 1.

21. An electronic component comprising the thermal interface material of claim 1.

22. A layered component comprising the thermal interface material of claim 2.

23. An electronic component comprising the thermal interface material of claim 2.

24. A liquid composition comprising the thermal interface material of claim 1.

25. A solid composition comprising the thermal interface material of claim 2.

26. A tape comprising the thermal interface material of claim 2.

25. A method of forming a crosslinkable thermal interface material, comprising:

providing at least one saturated rubber compound;

providing at least one amine resin;

crosslinking the at least one saturated rubber compound and the at least one amine resin to form a crosslinked rubber-resin mixture;

adding at least one thermally conductive filler to the crosslinked rubber-resin mixture; and

adding a wetting agent to the crosslinked rubber-resin mixture.

26. The method of claim 25, further comprising adding at least one phase change material to the crosslinked rubber-resin mixture.

27. A liquid thermal interface composition formed by the method of claim 25.

28. A solid thermal interface composition formed by the method of claim 26.

29. A tape comprising the thermal interface composition of claim 28.

30. An electronic component comprising the thermal interface material of claim 27.

31. An electronic component comprising the thermal interface material of claim 28.